

Borehole

22-09-01**Log Event A****Borehole Information**

Farm : <u>BY</u>	Tank : <u>BY-109</u>	Site Number : <u>299-E33-123</u>
N-Coord : <u>46,144</u>	W-Coord : <u>53,446</u>	TOC Elevation : <u>646.84</u>
Water Level, ft :	Date Drilled : <u>2/28/1970</u>	

Casing Record

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>100</u>	

Borehole Notes:

The borehole was drilled with a cable tool drilling rig, and the casing is apparently ungrouted and unperforated.

The drilling log noted that no contamination was detected during drilling.

Equipment Information

Logging System : <u>1</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>03/1995</u>	Calibration Reference : <u>GJPO-HAN-1</u>	Logging Procedure : <u>P-GJPO-1783</u>

Log Run Information

Log Run Number : <u>1</u>	Log Run Date : <u>9/7/1995</u>	Logging Engineer: <u>Dave Traub</u>
Start Depth, ft.: <u>97.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>51.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

Log Run Number : <u>2</u>	Log Run Date : <u>9/7/1995</u>	Logging Engineer: <u>Dave Traub</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>53.0</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>



Spectral Gamma-Ray Borehole
Log Data Report

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Borehole

22-09-01

Log Event A

Analysis Information

Analyst : D.C. Stromswold

Data Processing Reference : P-GJPO-1787

Analysis Date : 2/26/1996

Analysis Notes :

Verification spectra collected before and after the log runs showed that the logging tool was operating properly.

Gain drift was minimal during data acquisition of run 1, enabling a single energy calibration to be used during data processing. Gain drifts during run 2 necessitated multiple energy calibrations to maintain proper peak identification.

Repeatability was good at the overlap log section.

Correction factors for 0.25-in.-thick steel casing were used during data processing. No correction for water was applied because the borehole was dry.

Cs-137 and Co-60 were the only man-made contaminants detected. Cs-137 occurred mainly from the surface to about 37 ft and at discontinuous locations below 37 ft, including at the total depth (TD) of the borehole. Co-60 occurred mainly near 46 ft.

K-40 concentrations increased slightly below about 47 ft, near the tank's bottom.

See the Tank Summary Data Report for BY-109 for additional log analysis.

Log Plot Notes:

Separate log plots show the man-made (e.g., Cs-137) and the naturally occurring radionuclides (K-40, U-238, and Th-232). The natural radionuclides can be used for lithology interpretations. The headings of the plots identify the specific gamma rays used to calculate the concentrations.

A combination plot includes both the man-made and natural radionuclides, in addition to the total gamma derived from the spectral data and the Westinghouse Hanford Company (WHC) Tank Farms gross gamma log. The gross gamma plot displays the latest available digital data from WHC with no attempt to adjust the depths to coincide with the SGLS data.

Uncertainty bars on the plots show the statistical uncertainties for the measurements as 95-percent confidence intervals. Open circles on the plots give the minimum detection level (MDL). The MDL of a radionuclide represents the lowest concentration at which positive identification of a gamma-ray peak is statistically defensible.